

O'Sullivan (R. J.)

# SCHOOL HYGIENE;

A PAPER READ BY

DR. R. J. O'SULLIVAN,

BEFORE THE

N. Y. ACADEMY OF MEDICINE,

*June 19, 1873.*



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MEDICINE, JUNE 19, 1873.

BY

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## SCHOOL HYGIENE.

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It ought not to require a long argument to prove that the physical well-being of the pupils in our common schools is as sedulously to be cared for as their advancement in knowledge. And yet it is not easy to get practical recognition of this truth. Our educational system has undergone many a change within a few years; branch after branch of study has been added to the common-school course, until the latter has become in fact academical in its comprehensiveness. Where hundreds of dollars used to be expended on school-buildings, tens of thousands are expended now; every aid to learning, all manner of costly apparatus, with books and musical instruments, are furnished with unstinting liberality. And the tendency is still further to develop the system, until every child in the land may have in its power to secure free of cost the broadest and highest education attainable anywhere.

But at the same time care for the physical well-being of the pupils does not advance with equal steps. There is no doubt at all that this attempt at one-sided development—that is, at developing the intellectual faculties to the prejudice of the physical faculties—is radically wrong, and sure to lead to disastrous consequences. These two ends must be steadily kept in

view by the educator, namely, physical culture and mental culture, and they must go on with equal pace.

In the present discourse it is my purpose to offer some few considerations on that side of the great school question with which as a medical man I am most conversant—the physical side—and I will restrict my remarks to the subject of school hygiene.

#### AGE OF ADMISSION.

I think that the existing regulations with regard to the age at which children may be received into the schools should be amended. You will find among the pupils, children of four years of age. To require of such infants that they shall sit still by the hour is to impose on them a cruel task. If mere babes are to be cared for during a portion of the day in public institutions, then nurseries should be established for that special purpose, furnished with all needful appliances for the comfort and amusement of the little ones.

What should be the minimum age for admission to school? Some very high authorities would have it seven years, saying that no intellectual work should be required of a child before it has attained that age. We may grant the conclusion here while questioning the premises. Seven years is an early enough age for a child to be sent to school, *not* because the mental exertion would be injurious to its healthy intellectual growth, but because school-life, under its present hygienic surroundings, is very unfavorable to the child's physical development.

If intellectual work were the thing that does injury to the infant mind at school, then no child could ever reach even its seventh year, school or no school. During those early years it is that the observing faculties



are most wakeful, and it is then that the groundwork of all our philosophies, of all our religions, of all our fixed ideas, is laid. Acquisition of knowledge is going on at every instant, and the avenues between the outer world and the mind of the child are free and open as they will be never again. The child's mind is unfolding like a flower to the sun, and knowledge is its very life. But this acquisition of knowledge is not a task. It proceeds according to Nature's methods, and attains its ends without jar or strain. It cannot, therefore, be the intellectual work of the school-room *per se* which is injurious to the healthy growth of the youthful intellect; it must be our faulty methods of instruction. I should pity the unhappy infant sent to a school to learn a language: place that child among other children speaking the language it is desired to learn, and in a few weeks its vocabulary will be as full as that of its playmates.

Viewing the question in the abstract, therefore, I should say that intellectual occupation or work is not inimical to the development of the infant mind; on the contrary, it is the very condition of that development. When Nature's processes are followed, the acquisition of knowledge, far from being a hateful task for the child, is a delightful occupation. But it will be said that our system of education is fixed and practically unalterable, and that if it has its disadvantages these must be borne with. It does, indeed, look as though only a very distant future would see that change in our educational system which every philosophical mind desires.

If, then, our children are destined to find that the first steps in school knowledge lie through thickets and thorns; if they are to acquire school knowledge only

by methods which are in conflict with the intellectual and physical nature of man, we must say that a very immature mind or body can come under the influence of school discipline only at the certain cost of impairment: therefore I would suggest that the minimum age for admission be between six and seven years.

#### DIVISION OF TIME IN SCHOOLS.

But even though the age of seven years were fixed as the minimum for admission to the schools, it would still be necessary to modify considerably the routine of scholastic exercises. The hours of study are too long, especially in the infant classes. It is extremely unwise to require of little children that they shall observe silence and sit quiet in their places for any length of time. The very condition of the development of mental or bodily faculties is use, exercise. But in school the child is required to refrain for hours at a time from that play of the muscles, from that exhibition of exuberant life which is so natural to it—which, indeed, is as necessary for it as the inhalation of pure air. I have found schools in which the pupils were allowed no recess between their entry into the school in the morning and the dinner-hour, or between one o'clock and the hour of breaking up. Of course I lost no time in suggesting the remedy necessary to correct such a state of affairs, but, even with the usual forenoon fifteen minutes' recess, school-life cannot fail to have an injurious effect upon the health of the pupils.

I hope yet to see the routine of school-life brought into something like harmony with hygienic requirements. What these are, as ascertained by some of the great lights of our profession, I will state briefly. They may have the appearance of being extreme, and yet they are moderate enough.



First, then, Hufeland would have children spend the greater part of their waking hours in physical exercise. A child that is not vivacious, playful, alert, stirring, will hardly grow to be a vigorous man. Schooling must follow the course indicated by Nature; it will do only injury if it attempts to set Nature aside.

But it will perhaps be objected to this that if the greater part of the time is to be given to physical exercise, then the entire order of school routine, as it now exists, is a mistake. Well, men do commit mistakes, and it ought not to cause any very great surprise if we should detect errors even in our admirable school-system. I would not, however, be understood as disparaging our school-system, by any means. I believe that it is making progress as rapidly as any other system or function of our modern life. There would be a fearful overturning indeed if every institution, and every profession, and every individual, were to be sternly required to justify in the Court of Reason their every step, their every process, their every judgment. Yet when a demand is made that you justify a certain course which appears to be in the very teeth of Nature's law, it is not enough to plead immemorial usage. In the language of the civilians, there is no *prescription* against a law of Nature.

Thirty minutes is about the limit, in the infant classes, to which quiescence should be protracted. It should alternate with other thirty minutes of play, or spontaneous muscular exercise. With children of, say, nine to twelve, sixty minutes should be the limit.

There should be spacious play-grounds attached to each school-building, with ample sheds for recreation in stormy and very hot weather, and it would be very desirable if Hufeland's recommendation of holding

school in the open air in fine weather could be carried out.

But then the **EXPENSE!** It is a *necessary* expense, and I need say no more. As much cannot be said of every governmental outlay. Just consider the demands now made by military organizations here and in Brooklyn for armories and parade-grounds! Our schools have a far stronger claim than they, and they should be heard first.

#### RECREATION MUST BE SPONTANEOUS.

No military drill-sergeant exercises will afford a competent substitute for the spontaneous activity of childhood, on which healthy physical development depends. Such concerted exercises are of the nature of a task—they are not recreation. They are too stiff, too formal, for the ingenuous minds of children. Their own sports and amusements are infinitely better fitted to develop their powers symmetrically than the most cunningly-devised system of calisthenics in the world.

#### CRAMMING.

What is called *cramming* is a practice that ought to be frowned down by every honest man. It consists in loading the memory with a heterogeneous and undigested mass of dates and rules and formulas, generally with a view to demonstrating at a public examination or exhibition the excellence of the instruction given at a school. There is more wear of brain and more worry attendant on the preparation for such exhibitions than they are worth. And what does it all amount to? Nothing whatsoever. In fact, it is simply mischievous; very, very little of the entire crude mass of knowledge so stowed in the memory is ever retained. As a rule,

we might hold concerning mental pabulum as of corporeal food, that so much is *useful* and *used* as is needful at the time it is taken; any excess is rejected at once, or remains only to cause discomfort. Perhaps these remarks might be extended a little, and applied to the subject of multiplied studies; but I do not care to discuss every incidental matter. And yet I cannot refrain from just hinting at another analogy here, between the admission of knowledge into the mind and of food into the stomach. It is found that a few plain dishes are more promotive of health than a great variety of exquisite viands.

#### INJURY TO THE EYE.

In an address before the State Medical Society, Dr. C. R. Agnew calls attention to the increasing prevalence of asthenopic, refractive, and neurotic difficulties among scholars of both sexes. "These maladies are," he says, "growing rapidly more prevalent in cities, schools, colleges, and other centres of civilization." The same complaint is echoed from Germany. In England inflammatory diseases of the eye appear to be causing some alarm, as the pages of the London *Lancet* for the past two or three months will show. The disorders to which Dr. Agnew refers have their cause in a deficiency of light or imprudent use of the organs of vision, while the ophthalmic disorders spoken of in the *Lancet* are due to defective general hygiene.

The only effectual method of guarding against the spread of the last-named disorder is, by a close medical inspection of the children attending the schools, and the rigid enforcement of the rules of personal and local sanitation. The other class of optical maladies are to be held in check by introducing into school-architecture



such scientific principles as will insure to the pupils abundant light on all sides. The amount of light should be equal for both eyes; for, if, in reading or writing, one eye has a brighter light falling upon it than the other, the pupil necessarily expands or contracts, in proportion to the intensity of the light. The unequal expansion and contraction of the two pupils cannot fail to have injurious consequences. To guard against these evils, the school-room should be lighted from two sides, so that the light coming to both pupils shall be equal.

It would be absurd to expect of a city Board of Health that they should care for such minutiae as these, all-important though they be in their results. The most that can be required of such officers is, that they abate nuisances which threaten the public health. But when the question is, how shall the children in the schools be protected against the diseases incident to school-life, the school-system must give the answer out of its own resources. The school itself ought to have a sanitary code, with sanitary officers in sufficient force to carry it into execution.

#### VENTILATION.

It is of supreme importance that perfect ventilation should be secured for all school-buildings. The first thought of the architect who plans a school-house should be, how he may best solve this great problem of ventilation. The external appearance of the building should be only a secondary consideration. There is, in reality, no conflict between these two things when they are properly understood—between perfect adaptation of a building to its destined uses, and artistic beauty. Indeed, the beauty of a building must con-

sist in its adaptation to its ends. If it is ill-adapted, but yet possessed of a certain pleasing symmetry of form, we may say that it is a beautiful *object*; we should scarcely say that it is a beautiful *building*.

The problem of ventilation is one of considerable difficulty, and we are yet to find its perfect solution. In a climate so variable as ours, where the changes of temperature are so sudden, and have so very wide a range, it is no easy thing to conciliate the antagonistic demands for warming and ventilation.

In our plans we are prone to think much of styles of architecture; and, when we have made our choice between Grecian and Gothic, we then let ventilation provide for itself. A writer in the current number of the *Sanitarian* says: "It is extremely doubtful if a single church" (and he might have added, "*or school-house*") "now standing in the city of New York will be considered suitable, in a sanitary point of view, to be worshiped in fifty years hence, without being so altered as to be scarcely recognized by its designer." The same writer asks: "Is not this a good time to commence the study, and practice, too, of sanitary architecture? There have been a few spasmodic efforts within the last few years to improve the ventilation of our buildings; but these efforts have gone only so far, in most cases, as to make a few holes in the walls, which generally serve to let in cold draughts of air, and these are soon shut up in disgust." Enter a crowded class-room in any of our school-buildings in winter when the windows are shut. The oppressive atmosphere of that room is surcharged with carbonic-acid gas, decaying organic matter, and moisture from the respiration and perspiration of the inmates. In one of Dr. Endemann's experiments, the air of a class-

room was found to hold—one window being open—carbonic acid to the extent of seventeen and two-tenths parts per ten thousand. That was surely bad enough, showing the presence of this gas in a proportion four times greater than the normal quantity. But warmth is essential as well as ventilation; and, as the scholars were becoming chilled by the current of cold air entering through the open window, it had to be closed. After ten minutes a new analysis of the air was made, and the proportion of carbonic acid was now thirty-two and two-tenths per ten thousand. If the window had not been again opened, “we might, within one hour,” writes Dr. Endemann, “have reached the abominable figure of one hundred and ten.” This test showed only the amount of carbonic-acid gas; but the other poisonous elements of impure air are at least quite as injurious. I do not, of course, pretend to say that the air in our schools is generally as foul as this; but no sane man will affirm that in any of them the problem of ventilation has been any thing like satisfactorily solved. It is not for the physician to indicate the mechanical contrivances which are requisite for the solution of it. That is a question for the architects, and they will answer it, I am convinced, if school-boards will require them to do so. Let such boards only bear in mind that the “style” of a building is not the question, and that the first and foremost care must be to secure good ventilation.

The second annual report of the Massachusetts Board of Health includes a paper by Mr. A. C. Martin, architect, which offers several valuable suggestions as to the proper method of ventilating schools, and to that document I refer with pleasure.



## CONTAGIOUS DISEASES.

That no pupil should be admitted to a public school who is affected with any malignant or contagious disorder, would be readily admitted by all. But yet there is no doubt that, in certain districts, this plain dictate of sanitary prudence is disregarded, and the consequence is that skin-diseases and ophthalmic affections spread among the pupils. A weekly inspection of the scholars, and especially of those applying for admission, to be conducted by a physician, would be a very desirable measure.

## SMALL-POX.

With regard to the precautions to be specially taken against the spread of small-pox, it is indispensable that every pupil should be vaccinated, as the *sine qua non* condition of being admitted to the schools. While I was connected with the Board of Education as visiting physician, I had the opportunity of witnessing, in a very striking way, the efficacy of vaccination as a prophylactic against small-pox. Of forty thousand pupils vaccinated, not one was attacked by the malady, though the epidemic raged through the city for months.

The following passage, taken from a report made by me to the Board of Education, suggests, as I think, an effectual mode of securing our schools from the ravages of this dread malady:

“In a report made by me to the department, I suggested that to each child that was vaccinated a certificate should be given as evidence of the fact. This certificate would be serviceable in case of a return of the epidemic, or in the event of the child being transferred

to another school. It would thus save the vaccinating corps in the future much trouble. The present by-law, which requires that principals should ascertain the evidence of vaccination, does not, as it seems to me, meet all the requirements of the case. In the first place, they have no means of acquiring such evidence, save their own recollection, or the statement of the pupil, or the appearance of a cicatrix. But, when there is question of setting up an effectual barrier against the encroachments of so loathsome a disorder as small-pox, experience will decide that such evidence is insufficient. The medical man is here, surely, the most competent judge, and a certificate under his hand would be satisfactory and conclusive evidence. It is a fact of everyday experience that the vaccine virus does not invariably, and in every case where it is introduced, enter the system; and so it will often fail to give immunity against small-pox. For this reason it is essential that the work of the vaccinating corps should be reviewed, after a suitable interval, in order to ascertain whether or not the virus has been operative. Without this review, the work that has been done is incomplete, and there is no effectual immunity. No physician claims any efficacy for the vaccine virus except where it is absorbed; and therefore it will be pardoned if I insist, with considerable emphasis, upon the necessity of the review. In some cities of the Eastern States it is the rule, I believe, to require of children attending the public schools a certificate of vaccination."

#### THE SCHOOL A HUMANIZING AGENCY.

I hold that our schools should be made as nearly perfect as it is possible to make them from the sanitary point of view. A very large proportion of the chil-

dren attending them come from the very poor class; from the lanes and alleys, from those districts which are seldom visited by the scavenger or the garbage-cart; from crowded, tumble-down tenement-houses; from filthy courts, where the rays of the sun penetrate only to quicken the elements of disease, which exist in the reeking heaps of filth with which they are cumbered. The lives of many children open thus under most unfavorable auspices, and during the critical years of their childhood they find, in the wretched quarters which they inhabit, but very few elements of good, physical or moral.

Our school-system is for the education, the humanization of such even as these. The only way to humanize them, to give them correct notions of order, cleanliness, decency, self-respect, is by surrounding them during school-hours with a pure atmosphere, in the physical and moral sense. Give them in the school an abundance of sunlight and of good, pure air. You cannot develop moral qualities in the midst of atmospheric impurity.

#### NEED OF SANITARY SUPERVISION.

Well, if the considerations I have so far advanced possess any value, I think the conclusion will be that the hygiene of the schools needs to be inquired into and promoted. This would require sanitary inspection, medical supervision.

The French Government recently gave to the Royal Academy of Medicine, and to the three National Faculties of Medicine, the right of nominating each one a physician, to be a member of the superior council of Public Instruction. In the great city of New York I think that in the supreme council of Public Instruc-



tion—the central Board of Education—our profession ought to be represented, and represented strongly. If that body had but one member from the medical profession, a resolution, declaring that there is no need of sanitary supervision of the schools, could scarcely pass that board without a protest.

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#### DR. AGNEW'S REMARKS.

Prof. C. R. Agnew, M. D., said :

I have been much interested in the paper of Dr. O'Sullivan, because it calls the attention of the medical profession to the most important and complicated subject of the hygiene of our public schools. The doctor does not load his paper with tabulated statistics or involve us in any doubtful theories, but gives under actual headings a plain, simple, and suggestive narrative, derived from his experience as a school-officer, to show how the principles of hygiene are violated in our schools. Others will no doubt speak upon the general defects in the hygiene of our public schools ; it becomes my duty to say a few words regarding the prevalence of those forms of eye-disease which may fairly be set down as preventable. Every practitioner, who is called upon in our city to engage in ophthalmic practice, will testify that those forms of eye-disease which are directly traceable to over or faulty use of the organ are greatly on the increase. Of these maladies near-sightedness may be taken as the type and example. Near-sightedness is greatly upon the increase, and can be traced without the slightest difficulty to the influence of both public and private schools. Such a statement, capable of easy proof, does not produce the impression upon the public mind that it should, because there is profound ignorance among the public as to the nature of near-sightedness. Most persons think that a near-sighted eye is a good eye to have, that it is a "strong eye," one in which there is an economy of visual force, not enjoyed by eyes that see well at long range as well as near at hand ; that a near-sighted eye may cause

some inconvenience to its possessor during his early life, to be compensated for, however, by his being able to dispense with convex glasses for vision after forty years of age. There is in this belief just enough of truth to place it among the other common popular fallacies. A few near-sighted persons may enjoy the alleged advantage; the majority, however, of those who are near-sighted do not, but on the contrary grow more near-sighted as they advance in life, and experience more or less serious embarrassments in the exercise of vision for common purposes, while many grow blind. Progressive near-sightedness is a disease, a disease marked by very uniform organic changes of the visual organs, and one which may, unchecked, lead to the most disastrous results. The sooner this fact is known the better. A knowledge of it will impress educators with the duty of so carrying on the education of the young as not to induce near-sightedness and other forms of eye-disease. We have not yet obtained in this country the statistics that have been gathered in older countries, but every thoughtful medical man engaged in ophthalmic practice knows that the material for them exists. Let me call your attention briefly to a few facts gathered by foreign observers, and throwing light upon a great hygienic defect in our own school-system.

Dr. Cohn, of Breslau, examined critically two hundred and forty eyes of village school-children, and found that more than eighty-eight per cent. were in a normal condition. He also critically examined the eyes of over 10,000 school-children, and found that in the various grades there was a rapidly-increasing near-sightedness. The result of his examination showed, when tabulated, that the near-sightedness rate was as follows: In elementary schools, 6.7 per cent.; in intermediate schools, 10.3 per cent.; in high-schools, 19.7 per cent.; and in colleges, 26.2 per cent. In some of the highest classes the number of near-sighted students reached nearly sixty per cent. of the scholars.

Dr. Erismann, of St. Petersburg, made a study of the eyes of four thousand three hundred and fifty-eight (4,358) school-children, and showed that the near-sightedness rate increased rapidly as he ascended from the elementary or primary

schools to the colleges, and that the *sharpness of vision* lessened. He found that 30.6 per cent. of the near-sighted came from parents one or both of whom were near-sighted, and a larger portion of them than of others showed grave organic changes in the coats of the eye essential to vision. These observers, with others, have proved that the causes which led to the production of near-sightedness were, insufficient light, badly-constructed tables and seats, and continued tension of the overworked eyes. Bad light and position tend to embarrass the student in the exercise of that tension or accommodation of the eyes which is essential to accurate seeing, and to develop near-sightedness. Moreover, the near-sightedness thus induced in a child previously from ophthalmic disease is almost invariably progressive, and sooner or later complicated by organic changes, threatening blindness. Graefe has shown that this exercise of tension, in the effort to see, produces disease in the internal tissues of the eyes, developing congestion, disturbing the nutrition of the eye, softening its tissues, and thus producing an incurable state. The baneful effect of this form of eye-disease does not stop in impairing or spoiling the visual organ merely and entailing ophthalmic disease of the gravest kind upon succeeding generations, but influences in many ways the bodily health of the victim. While the student is bent over a badly-shaped desk in insufficient light, and too long confined to excessive tasks, he is in other ways injuring his body. The shoulders are thrown forward, the chest contracted, the abdominal, thoracic, and pelvic viscera are compressed, and the very sources of animal life obstructed and damaged. Usually the bad air of the school-room is to be added as another cause of disaster. The blood, rendered impure by the noxious ingredients of the stagnant atmosphere, is thrown upon a working brain which should have the purest nutriment. The heart, lungs, and other thoracic and abdominal organs essential to life and nutrition, are impaired by the bending position of the student, intent upon his intellectual work, and, failing to get that refreshment which they need from properly-aërated blood, perform their functions imperfectly, and thus slowly but most effectually produce in the sufferer that pale, round-



shouldered, stooping, shambling, stumbling, near-sighted, dyspeptic, nervous, sleepless person, who, even though he may do something for science, and through it for humanity, does little or nothing to improve the tenement of the soul, and too frequently transmits to his puny progeny the indelible marks of his gross though unconscious violation of the slightest and most demonstrable laws of health.

We cannot safely say that our school-houses and our school methods are so good that we are in no danger of repeating the mistakes made in some of the German schools and colleges. Every one, familiar with our school and college life in New York and elsewhere in the United States, knows that many of our school-houses are bad in light, bad in ventilation, bad in desks and seats, bad in the cramming to which the students are exposed. That near-sightedness and other forms of eye-disease are rapidly increasing, and that the chances are against a lad or girl getting what is called a completed collegiate education without irreparable damage done to health and prospect of future usefulness, is certainly true. Medical men, then, have a duty in this matter. They must speak calmly, intelligently, and forcibly until their counsels prevail. Now, it is not thought worth while to bring a medical man into a board of school or college trustees, or even to ask formally for his advice in arranging a curriculum. Even in our much-praised but defective public-school system any public-spirited man, however ignorant of the rudiments of the science of hygienic education, is more likely to be placed in control than a medical man. In the present state of public opinion the abuse cannot be corrected until the medical profession, by persistently inculcating correct ideas, so elevates public opinion as to demand the presence and constant personal influence, in every school and college in the land, of medical and sanitary experts. To accomplish this desirable result this Academy of Medicine may do much, and thus act upon the suggestions of the paper of our colleague.

#### DR. JACOBI'S REMARKS.

Prof. Jacobi, after expressing his thanks to Dr. O'Sullivan for an opportunity of listening to his paper, and stating that

the doctor had requested him to make some remarks upon the age at which children ought to be sent to school, spoke of the anatomical and chemical changes taking place in the infant's and child's brain, in the course of its normal development. Embryological studies have been followed with a great deal of zeal, but it appears that this zeal does not reach far beyond the period of birth. In fact, although the literature on the pathology of infancy and childhood is very extensive, the monographs and papers on the physiology, particularly of the brain and nervous system in general of that period of life, are but very few. As far as the relative proportions of the single organs of the body at different ages are concerned, we are even compelled to look for information on these subjects more at the hands of such scientific men as teach, or taught, in artists' schools, than of anatomists proper.

The functions of the brain depend on its development. Fat and phosphorus appear to be in a certain proportion to its action; in the adult it is mostly found in the white substance of the brain; in the embryo and the newly-born, in the medulla oblongata. Thus it is, in part, explained how the principal functions of the newly-born and infant are concentrated in this part of the nervous system. There is, besides, less of those substances in the young than in the old.

Other differences are exhibited by the percentages of water. The more water, the lesser the function. In the new-born least water is found in the medulla oblongata (84.38 p. c.), another proof of the superiority of this part of the nervous centre. Next comes the pons Varolii (86.77), which has the very smallest amount of water in the adult. The white substance of the large hemispheres contains most (89.93) in the infant, while it has less in the adult; and the gray substance of the infant has 87.76 percentage of water, while it contains a large percentage of it in the adult (without, however, obtaining the same absolute percentage of the infant). In this respect, while the embryo (also the infant) is so much inferior to advanced age, it ranks equal to the very oldest age of the human species or the lower vertebrates.

In the embryo and newly-born there is no or little difference between gray and white substances. This difference is

a condition *sine qua non* of the normal action of the brain in advanced age.

In the infant the whole mass of the brain is soft, uniform, grayish, the ventricles smooth; the convolutions are but few, and large. In the adult the differences of the brain-substance are better marked, the ventricles more elaborately formed, the convolutions more numerous and irregular.

In the infant the peripheric nerves are larger in proportion than the nervous centres (with the exception of the sympathetic ganglia, which are large), the spines more developed in proportion than the brain—therefore more reflex action, with powerful circulation, than intellectual work.

The head of the new-born is one-fourth of the length, one-fifth of the weight, of the whole body. Its base is short, therefore the occipital bone horizontal; it is wide between its parietal tubera, therefore spherical, being low and narrow anteriorly.

The cranial cavity of the new-born (482 cubic centimetres) amounts to one-fourth or one-third of that of the adult, and grows very rapidly (999 cubic centimetres in the second year). The growth, however, is not uniform. Originally the occipital portion amounts to five per cent.—parietal 81.11, frontal 13.89—of the whole mass. Of these the first grows very fast, the second decreases a little in the second year, and the third grows but little.

The weight of the cerebellum in the infant (25 grammes, 7 drachms) amounts to six and seven-tenths per cent. of the whole brain; in the adult 12 or 14 per cent. Look at the rapidity of the changes. Six and seven-tenths per cent. at birth, nine and one-tenth in two months, 12 or 13 at ten or fifteen years, 12 or 14 in the adult.

The relations of the several parts of the infant and the adult brain are also instructive:

#### INFANT.

Anterior lobe (60-70 grammes)	=	$\frac{1}{3}$	of the adult.
Lateral (250 " )	=	$\frac{1}{4}$	" "
Cerebellum (25 " )	=	$\frac{1}{5}$	" "
Hemispheres (300 " )	=	$\frac{1}{4}$	" "

All the parts of the body have their fastest growth within the first three years of life.



Length of body at birth (according to Schadow), 18 inches (German, larger than English); at death, 66. Increase in the first year, 10 inches; second, 4; third, 4; fourth, 3; fifth, 3; sixth, 2; seventh, eighth, ninth, tenth, each 1, etc. A certain retardation therefore with seven years.

Proportion of upper portion of trunk (chest) to lower in the new-born = 1 : 2; in the adult, 1 : 1.618. This normal proportion is reached with the eighth year.

Lumbar region grows principally up to the ninth year (then again between twelve and fifteen)—ought to be developed before the children are compelled to remain long in a sitting posture. Retardation of the growth of the lower extremity, as also the trunk, and the whole height, about the seventh or the ninth year.

Relation of upper head (cranium) to lower (face) in the new-born = 1 : 1. In the adult = 1 : 1.618. This proportion is reached with the eighth year.

Between the fifth and sixth years the base of the brain grows very rapidly; the frontal bone protrudes anteriorly and grows upward. The anterior portion grows considerably, but still the white substance and middle portion of brain are prevalent. These are the organs for the receptive faculties and memory. About this time learning ought to commence in earnest. All the above figures point to the end of the seventh year as the period of beginning mental work. But the gray substance is also developing at that period. It ought to be influenced to a certain degree, like a young tree in the time of its growth, without, however, being strained. Many organs in the brain, many functions. Neglect none, exercise all gently. It is a mistake to exercise one faculty only. Our text-books, in the shape of catechisms, exercise the memory only, and thereby fatigue and exhaust. The compound exercise, consisting in walking, with its changes and coöperative action, is less fatiguing than standing on a single leg. Learning by heart is not learning, and reciting is not thinking; just as little as deglutition is digestion.

The younger the age in which children are sent to school, the more they are apt to suffer from school-diseases. Improper temperature, bad air, dust, contagion, insufficient respiratory

movements, insufficient muscular action, compression of abdominal viscera (thereby nose-bleeding, headache), scoliosis. This is apt to commence very early, its causes being local; habit of improper posture, the effort to raise the right shoulder, to hold the head to the left to follow the movements of the pen, the height and distance of the tables, the accumulation of clothing (in girls entering the benches) under the gluteal region, the resting on one (mostly the left) synchondrosis sacro-iliaca, etc.

Besides, every organ which is over-exerted in its physiological function, especially when in the process of normal development, will soon exhibit the symptoms of pathological in place of physiological congestion. Epilepsy and St. Vitus's dance are superinduced by over-exertion of the brain, as the latter is also liable to result in exhaustion. Frequently very promising little children become dull and lazy; and other boys trained a few hours daily in an evening school will often outdo in a short time those who commenced their school drilling at an early age. Moreover, the time indicated above—seven or eight years—is just that in which a spontaneous love for more active work is generally developed.

It is, further, the period when morbid tendencies diminish considerably. Contagious diseases of all sorts and tubercular meningitis are not so frequently observed after the seventh or eighth year. Of all the deaths taking place in New York City, 29.63 per cent. fall within the first year, 10.03 the second, 4.37 the third, 2.40 the fourth, 1.64 the fifth, 3.20 the sixth—thus 51.28 within the sixth year. The whole period from the sixth to the eleventh year yields but 1.50 per cent. Thus the principal mortality has passed by at the time proposed (seven or eight years). It is a common experience that orphan asylums containing children from seven or eight to fifteen years have a low mortality, proving that this period of life yields less dangers, while it also exhibits a greater faculty and willingness to undergo mental work on the part of the children. Every organ, the brain like the others, must be sufficiently prepared, when it is expected to be capable of being trained.

The age proposed above cannot be expected to be the exact one in every individual case. No rule will be valid al-

ways. The state of health will sometimes be such as to preclude a child's going to school at the age of seven or eight, or at any age. Contagious diseases, insufficient intellect, epilepsy, chorea, retarded growth without any apparent local trouble, acute or chronic organic diseases, deformities, and many other causes, may keep a child out of school, with or without the approval of parents, part of whom are just as apt to send their children to school from vanity as from anxiety to get them out of the way.

### REMARKS OF DR. J. C. PETERS.

Dr. Peters said :

I believe that there are about 250 public schools in this city, twenty-three hundred (2,300) teachers, and upward of one hundred thousand (100,000) scholars<sup>1</sup>—all now without proper sanitary and medical supervision. The bare statement of these facts is sufficient; they speak for themselves. It is a disgrace to the age, to the city, and to the persons who have brought about this condition of things.

I am sure that any skilled medical sanitarian could discover scores of sanitary defects in the management of our public schools. I infer that the teachers will always be glad to receive hints about the health of their scholars, and it is very necessary that they should have them. Vaccination is too trite a subject to be talked about now; but all those great contagious and infectious diseases which break out in large cities, are brought to public schools, there increase a hundred or a thousand-fold, and then are redistributed all over the city, require particular attention. Children who have had measles, scarlet fever, varioloid, chicken-pox, small-pox, whooping-cough, etc., are only too often allowed to go to school long before they are properly disinfected and purified, and while they are still capable of giving the disease to others in every direction. I earnestly call particular attention to the fact that not only the clothing of such children should be properly aired or purified, but their whole persons should be thoroughly washed, soaped, and well scrubbed, especially their hair. Every crust or scab of small-pox, varioloid or chicken-pox, should be removed from

<sup>1</sup> The recently-annexed school districts not included.



the heads of these children ; and every scale from the hair and persons of those who have had scarlet fever or measles, before they are allowed to rejoin their classes. The scurf and scales falling off from the heads and persons of children lately recovered from scarlet fever and measles will float in the air, be inhaled by others, and assuredly cause the disease, unless the hair, head, and persons of these children have been thoroughly soaped and lathered, and washed with plain or carbolic soap. The expectoration of children with whooping-cough is infectious. The proper disinfection of school premises can only be supervised by a skillful medical man. Such instances could be extended *ad infinitum*. A hint is sufficient for the wise ; for constant sources of disease must be arising among 100,000 children which will assuredly react upon the whole community unless watched and properly met by competent medical skill. It is not only a crime but it is a gross inhumanity to leave so large a number of persons and so great a number of public buildings without proper sanitary supervision, and we cannot even afford to *pity* the *presumption*, which can only be *born of ignorance* too gross to be tolerated, which has produced this state of things.

In concluding the discussion, Dr. O'Sullivan, after expressing his acknowledgments to the members of the Academy and the profession generally, for the interest they had taken in the subject to which he had that evening the honor of calling their attention, said he would merely allude to a few points, in reference to which he was afraid he was not sufficiently explicit in his paper. The infant-class rooms in primary schools and departments were as a rule excessively overcrowded, and in many instances largely in excess of the number allowed by the by-laws of the Board of Education. It was not an uncommon occurrence to find from one hundred and fifty to two hundred of these very young children in the gallery classes. As an instance of this excessive overcrowding, he stated that one of the primary departments had an average attendance of fifteen hundred. The middle rooms were so badly lighted that in cloudy weather the pupils could scarcely discern the figures on the black-board. As a measure of relief for these overcrowded class-rooms he suggested (in his report, Novem-

ber, 1872) that the lower classes, comprising the fifth and sixth grades, should be dismissed as soon after the morning session as the requirements of the present law on this subject would permit. This suggestion, if acted upon, would not materially interfere with the studies pursued in these classes, and could not fail to be beneficial to the health of the pupils. In warm weather during the noon recess, they are exposed to the intense heat of the sun, at the hottest hour of the day, and in the winter season they are exposed to catarrhal affections. He condemned in decided terms the basement class-rooms. In this connection the doctor referred to his annual report to the Department of Public Instruction, April, 1872, in which he says: "In the basement class-rooms there is an insufficient supply of pure air and light. These rooms are situated in the immediate vicinity of the water-closets, being lighted from the yards, and are in other respects ill-suited for class purposes." In certain school districts the condition of the school-houses was such as to indicate the necessity of extensive repair. Dr. O'Sullivan had made several reports on this subject, in which he called the attention of the Board of Education, urging the necessity of action in this matter. He had made, in the early part of this year, an inspection of all the schools under the jurisdiction of the Department of Public Instruction, and reported upon their condition—a synopsis of which report was under the consideration of the Committees on Course of Studies and Buildings at the time the late Board was abolished. It would take at the present time upward of half a million dollars to put those school-buildings in proper repair. Of course, the longer this matter is deferred the greater the expense will be, not to speak of the injury to the health of the children which must necessarily follow from their present condition. He regretted to add that the present Board of Education failed to apply for the necessary funds to make these improvements previous to the adjournment of the Legislature; in consequence of which the sanitary defects in the school-buildings—as to ventilation, etc.—to which he alluded, would continue to exist, as no adequate measures could be taken during the ensuing vacation to remedy them. The proper sanitary supervision of the schools had not been considered; in fact, this important subject had been entirely ignored.

## APPENDIX.

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AN abstract of this paper appeared in the *New York School Journal*. A proposition was also made to have it published in the Transactions of the New York Academy of Medicine. In deference to suggestions received from reliable sources, it was deemed best to place it before the public, with the remarks of the eminent physicians who took part in the discussion. The paper has been favorably received and commented upon, by distinguished members of educational institutions. School-boards, in this and other States, have asked for copies. Encouraged by the opinions of the press, intimating a desire that the public should become better acquainted with the subject of which the paper treats, the author has concluded to publish it in pamphlet form. In his first Annual Report to the Board of Public Instruction on the sanitary condition of the public schools of this city (which preceded the reports of the press, and the Board of Health), the author called attention to the unsanitary condition of the class-rooms, water-closets, etc., and made such suggestions as were deemed necessary to place those buildings in a proper sanitary condition (*see* Annual Report—minutes of the Board, for the



year ending April 30, 1872). In a subsequent general report on this subject, an abstract of which appears in the Journal of the Board, January 15, 1873, special attention is called to the condition of the primary schools in certain districts, which were excessively overcrowded, the buildings and class-rooms being unsuitable for school purposes. It was recommended that the refusal of admission of new pupils, beyond the capacity of the class-rooms to accommodate them, should be enforced. The building of additional primary schools, or of wings added to primary departments, was also recommended. This would afford the needed relief, especially in the most populous districts.

At a recent meeting of the present Board of Education, action was taken in this matter, in so far as suppressing some of these schools was concerned. The other portion of the recommendation, viz., the reduction of the number of pupils in the class-rooms (which in many instances is largely in excess of the average allowed by the By-Laws of the Board of Education), has not yet been acted upon. Transferring these children to other schools may in some measure obviate the injurious effects of overcrowding, but it is obvious that it cannot materially benefit the health of the pupils unless the numbers are reduced to the required standard. This important sanitary measure will, it is hoped, receive due attention from the school authorities, when they come to consider the various methods of improving the ventilation of school-buildings which are now put forward. With these measures enforced, and medical inspection thoroughly and systematically made, the health of the children will be properly protected. This latter requirement is of the greatest importance, as the other improvements contemplated are

but adjuncts to this end. The results attending the medical inspection of the schools prove the necessity of the office, and place beyond question the propriety of its institution. It was a *reform* in school management which their hygienic surroundings demanded. This deduction is sustained by public opinion, as expressed by the press, and leading medical journals. No stronger evidence need be adduced as confirming these views than a brief extract from a letter from one of the most illustrious observers of our school-system, the late James W. Gerard, who kindly sent to the author of the paper a letter recommending the present Board of Education to continue the office of Sanitary Superintendent. After a careful review of the results of that office, Mr. Gerard says:

“The second object in establishing it” (viz., the sanitary superintendency), “the prevention and check of pestilential diseases in the schools, I am satisfied that it has been essential to the health and lives of the pupils in small-pox, which, when it breaks out, sweeps the schools, from the neglect of thousands of parents in not having their children vaccinated. Look how this pest has broken out in the schools since the organization of the department, and put the question to yourselves, but for it, how many children who are now well and hearty would have been dead and buried, victims of the disease! I have examined into the vaccination by Dr. O’Sullivan, since he has been in office; and by *his untiring energy* and assiduity he has more or less vaccinated the schools in the city, not merely by thousands, but by tens of thousands. Suppose the pest should break out again to-morrow (and it is liable to reappear every day), what would the Board do? Would it let it run riot without any attempt to stop it?

What would *public opinion* say in that case? Would not the Board be compelled by this opinion to reverse their wheel of action and restore it?"

The State law of 1860 in reference to the subject of vaccination, chapter 438, section 1, directs that the trustees of the several common-school districts in this State, and the proper local boards of common-school government in the several cities of the State, shall exclude from the benefits of the common schools any child or person who has not been vaccinated, and until such time when said child or person shall be vaccinated. This law further requires the school boards in the various districts of the State to include in their annual report the number in their several districts, between the ages of five and twenty-one, who are vaccinated, and the number unvaccinated. This law further authorizes the school boards in the various districts of the State to employ a competent physician to perform this duty; the expenses incurred by the act shall be included and collected in the annual tax bill of the town, village, or city, as may be proper according to law. The Board of Education of the city of Elmira, in this State, has complied with the requirements of the law, and the success which has attended the action of the board reflects the highest credit on their intelligence and efficiency. Medical inspection of the schools under their charge has received due attention by the appointment of a sanitary superintendent. The duties of this officer are defined as follows, Article IV., Section 1, By-laws of the Board: "The Sanitary Superintendent of the Board shall have authority to visit the schools whenever he shall deem it necessary, for the purpose of examining what pupils have not been vaccinated,



and no pupil shall be allowed in the public schools who has not been properly vaccinated.

"SEC. 2. Certificates of vaccination given by the Sanitary Superintendent or by any reputable physician, approved and indorsed by the Sanitary Superintendent, shall be kept and filed by the principal of the school at which they are received, to be given back on the transfer of the pupil to another school, or on his or her removal from the city.

"SEC. 3. It shall be the duty of the principal of the school to enter the word *vaccinated* in the school register opposite the name of any pupil producing a proper certificate of vaccination; and such entries, with the certificates on file, shall be deemed sufficient proof that the pupil has complied with the requirements of the law of this State, in respect to vaccination."

From the report of Dr. Frank B. Abbott, the Sanitary Superintendent, the following abstract is given: "Of the beneficial results of a law providing for enforced vaccination in the schools, no liberal-minded person can have any doubt. I think we may attribute our good fortune in escaping an epidemic of small-pox in the city, in a large measure, to the thorough manner in which vaccination has been insisted upon among the children in all the schools. What else could have protected us when neighboring towns suffered so severely from the ravages of this disease? But for this necessary and humane observance of law, one of the schools would have been the means of communicating and spreading the contagion of small-pox on one occasion, when two classes were exposed by the presence of pupils coming down with varioloid, who were permitted by their ignorant parents to be in

daily attendance, notwithstanding the fact that one of the family, with whom they were forced by circumstances to be in constant contact at home, was lying sick with the worst form of the disease, which ultimately proved fatal."

When we contrast this practice with that pursued in this city, that of requiring the evidence of vaccination previous to the admission of pupils, it must be clear to any reflecting mind that in this respect the statutory requirements are not properly complied with; and the data furnished insufficient and unsatisfactory. If those measures, in compliance with the law, can be so successfully enforced in the city of Elmira, whose schools have an average daily attendance of 2,331 pupils, and deemed indispensably necessary for the protection of their health, how much more necessary the fulfillment of the law must be in the direction of the schools of this city, with an average attendance of upward of 100,000 pupils! In the supervision of their studies, there are employed, besides the City Superintendent, six assistant superintendents; and it is proposed to add to this number, as, it is alleged, the increased area of the city requires one additional assistant. If it be necessary that additional superintendents should be appointed (and no one will doubt it), in order that the mental training of the pupils be kept up to the required standard, is it not also necessary and reasonable that the physical condition of the pupils should receive some attention from the Board? There should be one of those superintendents charged with medical supervision. No mere plea of economy will be considered a sufficient excuse in ignoring this requirement, as the health and usefulness of a large portion of the future generation of this city depend upon this action. With a system of education so im-

mense as ours, which will this year require an expenditure of \$4,000,000 (four million dollars), the plea of economy will not be accepted as sufficient by the public. The duty of the school authorities is plain. They are bound legally and morally, as the conservators of the health of the children confided to their care during school-hours, to place around them such safeguards that their physical growth shall keep pace with their mental.

The question will perhaps be raised by some well-meaning persons, whether the sanitary inspection of the schools does not come under the jurisdiction of the Board of Health. It is true that the latter department, on extraordinary occasions, may, for the protection of public health, enter any public or private building, and take such precautions as may be deemed necessary. The special sphere, however, of the Health Board is the correction of flagrant violations of the sanitary laws, the stamping out of contagious diseases in such centres of their propagation as market-places, slaughter-houses, and the immense tenement-house population, which are always fruitful sources of disease. In this sphere of its duty it has ample work to do, which will require all its resources and energy to accomplish, without interfering with the internal affairs of other boards who are obligated by law to perform this duty. The Board of Health already, in the performance of its arduous duties, has rendered valuable service to the inhabitants of the city, in arresting the spread of epidemic diseases; and also in the assistance rendered by them during the recent epidemic of small-pox. The success attending the result of this work is, that it was the largest and most successful school vaccination that had taken place in this city. This success was mainly due to the harmonious and conjoint action of both the



Boards of Education and Health—the medical officer of the former Board preparing the way by visiting all the schools of the city, and giving it plainly to be understood that no child should be vaccinated without its parents' consent. The vaccination was performed with but very little interruption of class-exercises. Precautions were also taken to have the children residing in or contiguous to the dwelling of a person having small-pox dismissed from the school until such time as it might be safe to readmit them. The authority by which these regulations were enforced is as follows:

*“ To the Trustees and Principals of Public Schools.*

“ In view of the alarming progress which this disease (small-pox) has lately made, though now on the decrease, it is suggested that you give these precautions your most earnest consideration, and afford every facility in your power to the efforts of the Visiting Physician of the Board, Dr. O'Sullivan, acting under its authority, and to the sanitary officers of the Board of Health, to have the directions here communicated thoroughly complied with.

Very respectfully,

BERNARD SMYTH,  
*President.*

L. D. KIERNAN,  
*Clerk of the Board of Education.*

In attempting this work on previous occasions, the Health Board met with a good deal of annoyance and opposition from the local Trustee Boards. The action of the Central Board of Education, in the vaccination referred to, obviated this difficulty by the authority invested in its sanitary officer, which tended to remove all difficulties; and this harmonized the action of both Boards.

On the question of school hygiene, I would call attention to the report on physical education found in the *London Journal of the Society of Arts*, for July 26th, 1872. I extract the following:

*“Sanitary Results.*—It has been shown as respects the common schools, where children are crowded together in ill-ventilated class-rooms, they are liable to become the common centres of children’s epidemics. The old workhouse schools were subject to murderous epidemics, but now by the application of rudimentary sanitary science they are made normal examples of what may be done by it. Of this, one of the schools, whence the children were sent to the first review, may be cited as an example: Some years ago the death-rate was ten and eleven per one thousand. The drainage and ventilation were improved and it was brought down to about eight in one thousand. Next, more complete personal ablution and general cleanliness were established, and the death-rate was reduced to about three in one thousand, or less than one-third of the death-rate prevalent among children of the middle and well-to-do classes.

“With such a general death-rate producible by sanitary science there would be upward of ten thousand children saved annually to the metropolis; without such sanitary precautions, new schools may be only extended centres of children’s epidemics.”

As to the necessity of medical supervision of the schools, it may not be out of place to give the testimony of an eminent physician holding the highest rank in the medical profession in the State. Prof. C. R. Agnew, in his annual address before the Medical Society of the State of New York at the meeting in Albany, February, 1873, said, in reference to the report of the author to the Board of Education on the sanitary condition of schools for the year ending April, 1872:

“Let us not content ourselves with hoping merely that the courteous action of the Board which ordered his” (the Sanitary Superintendent’s) “report in full upon the minutes and on file, would be followed up by intelligent action, but let us see to it that the hands of our professional brother, and all others who like him are at work, be strengthened, and

that we are behind them to sustain them with the full weight of our united intelligent influence, and to make action certain."

At the first regular meeting of the new Board of Education (April 12, 1873), the following communication was read :

NEW YORK, April 7, 1873.

*To the Honorable the Board of Education.*

GENTLEMEN: In view of the interest which, as medical men, we take in the sanitary condition of the schools, and of the public sentiment lately manifested with regard to the health and well-being of the pupils, we venture to commend this matter to your attention. We would also certify to the eminent fitness of Dr. R. J. O'Sullivan for the position which he now holds as Sanitary Superintendent. Dr. O'Sullivan is a physician in good standing in the medical profession. For several years he has given close attention to sanitary affairs, as relating to the schools, and from his studies and experience we deem him to be peculiarly fitted for the position which he has for some time held under the Board of Education.

Respectfully submitted :

ELLSWORTH ELIOT, M. D.,

*Pres. Med. Soc. of the County of New York.*

AUSTIN FLINT, M. D.,

*Pres. Academy of Medicine.*

JOHN C. PETERS, M. D.,

*Pres. of Medical Library and Journal Association of New York.*

C. R. AGNEW, M. D.,

*Ex-Pres. Med. Soc. State of New York.*

CLARK BELL, M. D.,

*Pres. Medico-Legal Society.*

E. R. PEASLEE, M. D.

E. KRACKOWIZER, M. D.

FORDYCE BARKER, M. D.

A. JACOBI, M. D.

JAMES ANDERSON, M. D.

WM. H. VAN BUREN, M. D.

JAMES R. WOOD, M. D.



Commenting on the paper on School Hygiene, the *Medical Record* (September 15, 1873) says:

"We have already seen what medical supervision has done toward preventing the spread of small-pox—of forty thousand pupils vaccinated under the supervision of Dr. O'Sullivan during a recent epidemic, every one escaped contagion. It may be urged that the Board of Health can look after such matters; but, in view of the immense amount of special work to be performed, this is absolutely impossible unless special medical officers be appointed for that purpose. But we care not how the inspectors are appointed, so long as competent men are chosen to perform the duties.

"As the case now stands, there is not only no medical inspection of our public schools, but, worse than this, medical inspection having been once instituted, is boldly and defiantly abolished. The duty of medical men in this matter is plain enough, and looks in one of the directions of good which they can accomplish as educators of the people and as creators of opinion upon all matters of hygiene. We appeal to the profession, and urge them to take this important subject under consideration, and use every endeavor to educate the people up to the point of appreciating, of demanding the necessary reforms. We are pleased to see so much attention given to the subject, and such efforts made in the direction of the necessary influence to be used, that in the discussion of the paper we can find such gentlemen as Agnew, Jacobi, O'Sullivan, and Peters, to speak so earnestly and so much to the point upon the question at issue. Let the profession everywhere follow their lead, and if they act with determination they can create such a sentiment among their respective communities as no school board shall dare, even for political reasons, to disrespect."

The following comments on the action of the Board of Education, and the consequences following the suppression of the sanitary superintendency, appeared in the editorial columns of the *Evening Post*:

## HEALTH IN THE PUBLIC SCHOOLS.

"It is not generally known that there are no provisions now in force for the sanitary and medical inspection of the public schools of this city. There are, on Manhattan Island, about two hundred and fifty public schools, containing nearly twenty-five hundred teachers and other officers, and more than one hundred thousand scholars. Many—indeed the most—of these scholars are the children of parents whose ignorance prevents them from fully understanding the unwholesome sanitary conditions under which their poverty forces them to maintain their households, while the scholars themselves are of that age most subject, not only to the common diseases of childhood, but to any virulent and contagious disease which may be prevailing in the community.

"It would be difficult to find a reason for this neglect to take proper precautions against the appearance and spread of disease among our public-school children, but the various steps by which this result has been reached are known to us. On the 2d day of December, 1870, the Board of Education appointed a visiting physician of public schools. This officer entered upon the duties of his office on the 1st day of January, 1871. On the 2d day of October, 1872, a resolution urging the appointment of a sanitary superintendent of the public schools was brought before the Board of Education, by which it was referred to the Committee on By-Laws. A favorable report was received from the committee at the meeting of the Board on the 30th day of October, whereupon the resolution was adopted, and the office at once filled. During the following winter, the State Legislature made a new charter for the city, by which the members of the Board of Education were changed throughout. At the meeting which the new Board held on the 30th of April, 1873, Commissioner Halsted presented a report in respect to a proposal to abolish the office of 'Physician to the Board of Education, and Sanitary Superintendent,' and also the following resolution:

"*Resolved*, That the office of Physician to the Board of Education be, and the same is hereby abolished on and after this date, and the duties heretofore performed by said officer

are and shall be lodged with the City Superintendent, where, by the statutes, they belong.'

"This resolution was amended, on motion of Commissioner Beardslee, by striking out all after the word 'date,' and in this amended form it was adopted without a dissenting vote. Since the 30th day of April, therefore, our public schools have been absolutely without any medical care whatever.

"As is suggested above, we are at a loss to account for this action of the Board of Education. Undoubtedly, the members acted on what seemed to themselves to be good and sufficient reasons. But we cannot go further than to give them credit for good intentions. They have made a great mistake, and, the further any one looks into the subject, the more apparent will this become.

"At a recent meeting of the New York Academy of Medicine, a paper treating of the care of children in public schools was read by Dr. O'Sullivan, and afterward commented on by Drs. Agnew, J. C. Peters, and Jacobi. The paper was a singularly able one, and the debate which followed very interesting. Two points were brought out with great clearness. The disease of near-sightedness is becoming more common in this country every year, in consequence of our badly-built, badly-lighted, and badly-managed public-school houses. The same thing is true of England, and, in a more marked degree, of Germany. What is worse, however, is the fact, according to Dr. Agnew, that when a child becomes near-sighted—that is, is not so naturally—the disease 'is almost invariably progressive, and, sooner or later, complicated by organic changes, threatens blindness.' The other point relates to contagious diseases, whose existence and spread among school-children can be prevented or stopped only by a weekly medical inspection of the scholars. Thus out of forty thousand school-children vaccinated last year, Dr. O'Sullivan says that not one was attacked by the small-pox. So other special diseases would be prevented by a system of medical supervision, which, without such supervision, either through carelessness or ignorance, enter our schools and disorganize them, if they do not decimate them.

"We cannot speak of the overcrowding and bad ventilation



of rooms, the long hours of confinement, and other evils, which will appear in the best system under the most careful but unprofessional management. These things are at once recognized, and may be remedied by a skillful physician. He is a check upon bad teachers, and an aid to good teachers. He is the terror of architects who undertake to build new school-buildings. He is a most valuable and necessary public officer, and it is not only disgraceful but dangerous that an attempt should be made in the city of New York to manage the public schools without his assistance."



